CLAIMS

1. Improved diffuser (10) for a centrifugal compressor, characterised in that it comprises blading with blades (12).

2. Improved diffuser (10) according to claim 1, characterised in that the said blading has a strength s of the said blades (12) which is between 0.5 and 1, including extreme values, the said strength s being provided by the ratio between the pitch p of the said blading and the chord c of the said blades (12), the said pitch p being provided by the ratio $\frac{\pi \cdot Dp\_in}{Z}$, wherein Z is the number of the said blades (12) and Dp in is the diameter of an intake edge of the said blading.

3. Improved diffuser (10) according to claim 1 or claim 2, characterised in that a deflection β of the said blading, i.e. the angle of displacement of a tangent line at the outlet of the blade (12) relative to a tangent line at the intake of the blade (12), is between an angle of 0° and an angle of 10°, including extreme values.

4. Improved diffuser (10) according to claim 1 or claim 2 or claim 3, characterised in that the ratio between a diameter of an intake edge Dp in of the said

blading and an outer diameter of an impeller D2 of the said centrifugal compressor, is between 1.04 and 1.14, including extreme values.

5. Improved diffuser (10) according to claim 1 or claim 2 or claim 3 or claim 4, characterised in that the ratio between a diameter of an outlet edge Dp out of the said blading and an outer diameter of an impeller D2 of the said centrifugal compressor, is between 1.25 and 1.35, including extreme values.

6. Improved diffuser (10) according to claim 1 or claim 2 or claim 3 or claim 4 or claim 5, characterised in that it is used in centrifugal compressor stages with a coefficient of flow of 0.03 or less.

7. Improved diffuser (10) according to claim 1, characterised in that a design of the said blades (12) is optimised by means of the so-called CFD i.e. Computational Fluid Dynamic method (in other words a method for fluid-dynamics calculation).

8. Improved diffuser (10) according to claim 1, characterised in that a design of the said blades (12) is optimised by means of experimental methodology.

9. Improved diffuser (10) according to claim 1, characterised in that it is used for delivery of a centrifugal compressor for re-injection.

10. Improved diffuser (10) for a centrifugal compressor, substantially as described and illustrated and for the purposes specified.